

CLAIMS

What is claimed is:

- 5 1. A method of making an implantable electrode array comprising:
- (a) forming electrode contact pieces made from a precious,
biocompatible material into a desired shape;
- (b) attaching the electrode contact pieces to a foil sheet made from a
non-toxic but chemically-active metal;
- 10 (c) connecting a wiring system to the metal contact pieces;
- (d) molding a flexible polymer carrier around the electrode contact
pieces and wiring system while such are held in place by the foil sheet; and
- (e) etching away the foil sheet, leaving the electrode contact pieces
exposed at a surface of the molded polymer carrier.
- 15 2. The method of Claim 1 wherein step (a) comprises forming the
electrode contact pieces into an oval shape.
3. The method of Claim 1 wherein step (a) comprises forming the
- 20 electrode contact pieces into a star shape.
4. The method of Claim 1 further comprising coating the electrode
contact pieces exposed at a surface of the molded polymer carrier with a
material that controls the surface impedance of the electrode contact piece as a
- 25 function of location on the contact surface.

5. The method of Claim 4 comprising coating each electrode contact piece so that the surface impedance of the contact piece increases as a function of distance from the center of the electrode contact piece.

5 6. The method of Claim 1 further comprising masking an electrode contact piece exposed at a surface of the molded polymer carrier with an insulative mask that prevents conduction at various locations at the surface of the electrode contact piece.

10 7. The method of Claim 1 further comprising coating at least one of the flexible polymer carrier or electrode contact piece with a drug compound selected to diffuse into tissue around the electrode array for the purpose of any one of the following: inhibiting fibrous tissue growth, inhibiting bone growth, promoting healing, preventing neural degeneration, and promoting neural
15 regeneration.

8. The method of Claim 7 wherein the step of coating with a drug compound comprises coating at least one of the flexible carrier or electrode contact piece with a steroid.
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9. The method of Claim 7 wherein the step of coating with a drug compound comprises coating at least one of the flexible carrier or electrode contact piece with a neuro-trophin.

25 10. The method of Claim 7 wherein step (c) comprises molding the flexible polymer carrier so that the resulting electrode array assumes a naturally curved shape.